DVI over Single CAT5 Series

CV-117

DVI over Single CAT5 Direct Plug-in Extender

User Manual

Made in Taiwan

Safety and Notice

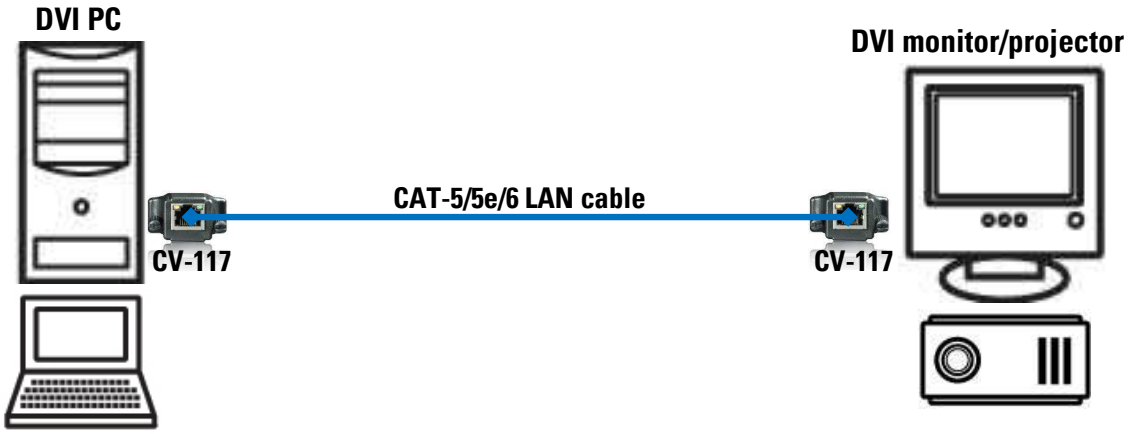
The **CV-117 DVI over Single CAT5 Direct Plug-in Extender** has been tested for conformance to safety regulations and requirements, and has been certified for international use. However, like all electronic equipments, the CV-117 should be used with care. Please read and follow the safety instructions to protect yourself from possible injury and to minimize the risk of damage to the unit.

- Follow all instructions and warnings marked on this unit.
- Do not attempt to service this unit yourself, except where explained in this manual.
- Provide proper ventilation and air circulation and do not use near water.
- Keep objects that might damage the device and assure that the placement of this unit is on a stable surface.
- Use only the power adapter and power cords and connection cables designed for this unit.
- Do not use liquid or aerosol cleaners to clean this unit. Always unplug the power to the device before cleaning.

Introduction

The **CV-117 DVI over Single CAT5 Direct Plug-in Extender** extends your PC DVI transmission distance up to 30m (100ft) with resolution 1024x768 @60Hz. With CV-117, users can transmit high quality digital video of PC applications through one cost effective CAT-5/5e LAN cable to the remote monitor or projector, instead of using short and expensive DVI cables. With embedded EDID inside the extender, your PC will continue to send the digital video even when the monitor is not connected. The user can then disconnects the monitor, place it in a remote location and reconnect it without rebooting the operating system.

The CV-117 includes two identical units: transmitting and receiving units. The transmitting unit is connected to your PC DVI output and the receiving unit is connected to the monitor or projector. While successfully connected, the two LED lights on each RJ-45 connector will blink. The transmission distance between the transmitting and receiving units can be up to 30m (100ft) under XGA (1024x768@60Hz) or 15m (50ft) under UXGA (1600x1200@60Hz). With compact size and requiring no power, CV-117 is the most cost effective choice for bringing your impressive digital video to the remote display.



Features

- DVI 1.1 compliant
- Handy DVI-D to RJ-45 adapters with programmable EDID feature
- Extend the transmission length from the sources up to 30m (100ft) under XGA (1024x768@60Hz) or 15m (50ft) under UXGA (1600x1200@60Hz)
- Identical units work at both transmitting and receiving end. Easy to install.
- No power required
- Compact size
- Direct plug-in
- Perfectly integrated with other DVI over CAT5 series products

The length depends on the characteristics and quality of the cables. Higher resolutions and longer transmission distances require low skew cables (<25ns/100m) for best performance. Unshielded CAT6 with metal RJ-45 connectors is recommended.

Specifications & Package Contents

Model Name		**CV-17**		**CV-117**	
Technical		CV-17-TX aka CV-117	CV-17-RX	CV-117	CV-117
Role of usage		Transmitter [TX]	Receiver [RX]	Transmitter [TX]	Receiver [RX]
DVI compliance		DVI 1.1			
HDCP compliance		No			
Video bandwidth		Single-link 165MHz [4.95Gbps]			
Video support		Up to WUXGA [1920x1200@60Hz] & UXGA [1600x1200@60Hz]			
Transmission over CAT5e		1920x1200@60Hz – 30m [100ft] 1024x768@60Hz – 60m [200ft]		1920x1200@60Hz – 15m [50ft] 1024x768@60Hz – 25m [80ft]	
Audio support		No audio for DVI signal			
Equalization		8-level digital at RX		None	
Input TMDS signal		1.2 Volts [peak-to-peak]			
Input DDC signal		5 Volts [peak-to-peak, TTL]			
PCB stack-up		4-layer board [impedance control — differential 100Ω; single 50Ω]			
Input		1x DVI	1x RJ-45	1x DVI	1x RJ-45
Output		1x RJ-45	1x DVI	1x RJ-45	1x DVI
DVI connector		DVI-I [29-pin male digital only]	DVI-I [29-pin female digital only]	DVI-I [29-pin male digital only]	
RJ-45 connector		WE/SS 8P8C with 2 LED indicators			
Rotary switch		None	8-level for EQ	None	
Mechanical		**CV-17**		**CV-117**	
Housing		Plastic mold	Metal case	Plastic mold	
Dimensions [L x W x H]	Model	[TX]: 50 x 40 x 20mm [2” x 1.6” x 0.8”] [RX]: 80 x 60 x 25mm [3.2” x 2.4” x 1”]		[TX/RX] 50x40x20mm [2” x 1.6” x 0.8”]	
	Package	270 x 175 x 80mm [10.6” x 6.9” x 3.2”]		170 x 115 x 40mm [6.7” x 4.5” x 1.6”]	
	Carton	450 x 370 x 300mm [1’6” x 1’3” x 11.8”]			
Weight	Model	[TX] –50g [1.8 oz]		[TX/RX] – 50g [1.8 oz]	
	Package			180g [6.3 oz]	
Fixedness		TX: Direct plug-in RX: Wall-mount with screws		Direct plug-in	
Power supply		None	5V 2A DC	None	
Power consumption		1 Watt [max]		0.5 Watt [max]	
Operation temperature		0~40°C [32~104°F]			
Storage temperature		-20~60°C [-4~140°F]			
Relative humidity		20~90% RH [no condensation]			
Package Contents		1x CV-17 [TX & RX] 1x 5V power adapter 1x User Manual		2x CV-117 1x User Manual	

Hardware Installation

1. Connect one of the CV-117 to your DVI source.
2. Connect the other CV-117 to your DVI display.
3. Make sure the CAT-5/5e/6 LAN cable is tightly connected between the DVI source and the display with the CV-117.
4. The installation is done.

DVI over Single CAT5 Series Lineup

	CV-15	CV-17	CV-117	CV-117E	WP-117A
Output to display	HDMI	DVI	DVI	DVI	DVI
Transmission over CAT5 at 1024x768@60Hz	25m [80ft]	60m [200ft]	25m [80ft]	25m [80ft]	30m [100ft]
Transmission over CAT5 at 1920x1200@60Hz	15m [50ft]	40m [130ft]	15m [50ft]	15m [50ft]	15m [50ft]
Power requirement	No	TX-No / RX-Yes	No	No	No
Equalization	No	Yes	No	No	No
EDID learning	No	Yes	No	Yes	No

Notice

1. The CV-117 may not be compatible with the DVI sources and displays that feature resolutions not in the aspect ratio of 4:3, 16:9 and 16:10.
2. All DVI over CAT5 transmission distances are measured using Belden 1583A CAT5e 125MHz LAN cable and ASTRODESIGN Video Signal Generator VG-859C.
3. The transmission length is largely affected by the type of LAN cables, the type of DVI sources, and the type of DVI display. The testing result shows solid LAN cables (usually in bulk cable 300m/1000ft form) can transmit a lot longer signals than stranded LAN cables (usually in patch cord form). Shielded STP cables are better suit than unshielded UTP cables. A solid UTP CAT5e cable shows longer transmission length than stranded STP CAT6 cable. For long extension users, solid LAN cables are your only choice.
4. EIA/TIA-568-B termination (T568B) for LAN cables is recommended for better performance.
5. To reduce the interference among the unshielded twisted pairs of wires in LAN cable, you can use shielded LAN cables to improve EMI problems, which is worsen in long transmission.
6. Because the quality of the LAN cables has the major effects in how long transmission distance will be made and how good is the received display, the actual transmission length is subject to your LAN cables. For resolution greater than 1080i or 1280x1024, a CAT6 cable is recommended.

Performance Guide for DVI over LAN Cable Transmission

Performance rating		Type of LAN cable		
Wiring	**Shielding**	**CAT5**	**CAT5e**	**CAT6**
Solid	Unshielded (UTP)	★★★	★★★★	★★★★★
	Shielded (STP)	★★★	★★★	★★★★
Stranded	Unshielded (UTP)	★	★★	★★
	Shielded (STP)	★	★	★★
Termination		Please use **EIA/TIA-568-B** termination (**T568B**) at any time		

Limited Warranty

The SELLER warrants the **CV-117 DVI over Single CAT5 Direct Plug-in Extender** to be free from defects in the material and workmanship for 1 year from the date of purchase from the SELLER or an authorized dealer. Should this product fail to be in good working order within 1 year warranty period, The SELLER, at its option, repair or replace the unit, provided that the unit has not been subjected to accident, disaster, abuse or any unauthorized modifications including static discharge and power surge. This warranty is offered by the SELLER for its BUYER with direct transaction only. This warranty is void if the warranty seal on the metal housing is broken.

Unit that fails under conditions other than those covered will be repaired at the current price of parts and labor in effect at the time of repair. Such repairs are warranted for 90 days from the day of reshipment to the BUYER. If the unit is delivered by mail, customers agree to insure the unit or assume the risk of loss or damage in transit. Under no circumstances will a unit be accepted without a return authorization number.

The warranty is in lieu of all other warranties expressed or implied, including without limitations, any other implied warranty or fitness or merchantability for any particular purpose, all of which are expressly disclaimed.

Proof of sale may be required in order to claim warranty. Customers outside Taiwan are responsible for shipping charges to and from the SELLER. Cables and power adapters are limited to a 30 day warranty and must be free from any markings, scratches, and neatly coiled.

The content of this manual has been carefully checked and is believed to be accurate. However, The SELLER assumes no responsibility for any inaccuracies that may be contained in this manual. The SELLER will NOT be liable for direct, indirect, incidental, special, or consequential damages resulting from any defect or omission in this manual, even if advised of the possibility of such damages. Also, the technical information contained herein regarding the CV-117 features and specifications is subject to change without further notice.